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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
	)	

To: The Commission

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OFFICE OF THE SECRETARY

REPORT OF TRITON PCS LICENSE COMPANY, L.L.C.

Triton PCS License Company L.L.C. (hereafter "Triton"), by its attorneys, hereby submits its Report regarding its current plans for implementation of wireless Enhanced 911 ("E911") Phase II automatic location information ("ALI") systems in its commercial mobile wireless operations. In its September 14, 2000 Public Notice, the Federal Communications Commission ("Commission") set forth the information to be submitted by carriers regarding their E911 Phase II plans on or before November 9, 2000.[1] In this report, Triton has endeavored to provide the Commission with the most up to date thinking within the company regarding E911 plans. Based on vendor availability, consumer acceptance, changes in equipment availability, new testing results or technology developments and similar factors, however, Triton will likely need to submit an update to this report in accordance with the instructions contained in the Public Notice.

[1] Wireless Telecommunications Bureau Provides Guidance on Carrier Reports on Implementation of Wireless E911 Phase II Automatic Location Identification, *Public Notice*, CC Docket No. 94-102, DA 00-2099 (rel. September 14, 2000).

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I. Background/Contact Information

A. Triton's History

Triton PCS License Company, L.L.C., through its parent, Triton PCS Holding Company, Inc., is the first member of the AT&T Wireless Services Inc. network of affiliates. Triton is licensed to build and operate a digital wireless network in a contiguous area covering approximately 13 million people in Virginia, North and South Carolina, northern Georgia, northeastern Tennessee and southern Kentucky.

The company markets its wireless services under the brand SunCom, a member of the AT&T Wireless Network. Triton PCS completed its initial network build-out and began providing service to its customers in January 1999. It has since launched service in 37 markets. Currently, Triton operates a network of seven mobile switches and over 1500 cell sites. Among its initial markets are Virginia's largest city, Norfolk-Virginia Beach, and its state capital, Richmond, as well as Charleston, Columbia, Greenville-Spartanburg and Myrtle Beach in South Carolina, and Augusta, Georgia. Triton's TRS Number is **817978.**

B. Triton's Contact Information

For the purpose of responding to the Commission's inquiries on Triton's current plans for E911 Phase II, Triton's contact information is as follows:

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II. E911 Phase II Location Technology Information

A. Type of Technology

Presently, Triton is working with its vendors to identify a Phase II solution that will fully satisfy the Commission's implementation, penetration and accuracy requirements. Triton will continue these cooperative efforts and hopes to be able to identify in the very near future the technology that will bring Phase II Automatic Location Information ("ALI") E911 service to its subscribers in the shortest possible timeframe.

As part of its continuing efforts, Triton is attempting to develop a handset-based ALI solution through the introduction of global positioning system ("GPS") technology in subscriber handsets. Triton has been working with its handset equipment vendors to ascertain what capabilities they are designing and at what price and time period compliant handsets could be made available commercially in large quantities. Triton's handset vendors include Ericsson, Nokia and Motorola.

While Triton believes that a handset-based Phase II technology solution might be its best option for Phase II compliance, it is nonetheless concerned over the cost of integration of the GPS technology into handsets – the integration will increase the price of a handset $40 to $50. Moreover, Triton's handset vendors have represented to Triton that handsets with the requisite ALI capability may not be available until sometime after October 1, 2001. When handsets do become available, Triton would expect to employ the same handset-based solution across all of its markets.

Thus, while Triton continues to pursue diligently its handset-based Phase II solution, it is concerned that this solution cannot be realized without a waiver or some modification to the

Commission's Phase II handset activation schedule. Triton also is concerned over the possibility that customers will be unwilling initially to purchase the new compliant handsets, thus making the handset penetration rates the Commission's rules currently require wholly dependant on customer acceptance. Indeed, should customers find the handset to be larger, awkward or otherwise unacceptable, carriers, like Triton, through no fault of their own, may be unable to reach the Commission's handset penetration requirements. This is a critical issue for carriers who would welcome additional guidance from the Commission on how it intends to address the customer acceptance aspect of its activation requirement.

Triton is also exploring the possibility of deploying a network-based solution to comply with the E911 ALI systems requirement. Should Triton decide to take this route, its network based solution likely would be based on Grayson Wireless' network overlay model, although Triton is also evaluating similar network overlay technology from TruePosition. The Grayson model uses a Geometrix Wireless Location Sensors system ("WLS") which measures the features of wireless handset signals. The process by which the caller's location is determined is through the overlay features of Time Difference of Arrival ("TDOA") and Angle of Arrival ("AOA"). Although the TDOA technique by itself may be sufficient to meet the tracking and accuracy requirements of E911, the AOA technique enhances the measurements provided by the TDOA technique by determining the direction of arrival of a handset's signal at the cell site. Thus, when TDOA and AOA capability is used jointly, coverage and accuracy is augmented.

If it ultimately chooses to deploy a network-based solution, Triton would expect to employ the same network-based solution across all of its markets. Based upon the capabilities of

the Grayson/TruePosition network solutions, Triton would expect that its network overlay would use both TDOA and AOA as a means of improving the accuracy of ALI data.

Triton is concerned with the anticipated costs to deploy a network based solution, which Triton has projected to be in the tens of thousands of dollars for each cell cite and millions in total capital investment. Triton's other main concern regarding a network-based overlay design and deployment is that the provider's claims as to the accuracy of the resulting ALI data have not been systematically validated. This is a critical issue not just for carriers and the PSAP community, but for the Commission. If, for example, Triton were to deploy a network-based solution, and despite Triton's best efforts at testing and optimizing a network-based solution, a network-based system fails to provide sufficient accuracy, Triton would have no alternative but to seek a waiver of the Commission's rules. Similarly, other carriers would have to seek relief from the rules if the accuracy claims of vendors are not borne out in real-world deployment and operation.

Triton is committed to pursuing all possible channels to uncover a Phase II solution that complies with the Commission's standards and will bring enhanced location service to the largest number of Triton subscribers as quickly as possible. In addition, Triton will continue to work closely with vendors to pick its Phase II solution. At this point, however, Triton is not in a position to choose between a handset or a network-based solution.

B. Testing and Verification

As a member of the AT&T Wireless Network, Triton has access to AT&T's significant research and development resources. Where possible, Triton has made use of the results of AT&T's testing of both handset and network-based approaches in making comparative

evaluations. While to date Triton has not performed its own testing of the handset or network technologies, however, Triton will test the efficacy and accuracy of any handset-based solution or network overlay as those solutions are phased-in as described in Section C, below.

C. Implementation Details and Schedule

Should Triton determine to deploy a handset-based Phase II solution and assuming sufficient quantities of Phase II compliant handsets are commercially available, it will have to purchase and introduce GPS capable handsets into its markets after verification that the quality of performance of these handsets meets the standards for call quality and interoperability with other networks of the handsets currently offered to its subscribers. Testing will also have to be done to verify the ALI accuracy of the handsets.

Triton anticipates that it would phase-in the deployment of a hand-set based solution using the priorities established in the Commission's new implementation schedule. Specifically, Triton would begin selling and activating ALI-capable handsets by October 1, 2001. By December 31, 2001, Triton would expect to have at least 25 percent of all new ALI-capable handsets activated and 50 percent by June 30, 2002. By December 31, 2002 and thereafter, Triton would use its reasonable efforts to have 100 percent of all new digital ALI-capable handsets activated. Triton would expect to achieve full penetration (95 percent) of ALI-capable handsets in its total subscriber base by December 31, 2005.

The plan and schedule for implementation for a hand-set based solution will depend almost entirely on adequate handset availability. As stated previously, certain vendors have represented that the required handset capability may not be available until sometime after

October 1, 2001. The implementation and penetration schedule is also dependent on customers' satisfaction and willingness to purchase the new compliant handsets.

Should Triton operate a network-based ALI system, Triton will have to deploy a full network overlay of its seven mobile switches and over 1500 cell sites. New hardware and software will be required at each cell site and at every switch. Additionally, new software (and potentially, new hardware) may be required as the network overlay is integrated with the connection Triton maintains to each PSAP. In addition, because the size of the AOA antennas (which Triton anticipates using should it deploy a network-based solution) has generated concern on the part of property owners and zoning authorities, Triton may be required to obtain additional zoning approval. Typically, Triton's existing permits do not allow the installation of additional large antennas without securing new zoning approval and the corresponding building permits. It is anticipated that the zoning approval necessary for placement of AOA antennas would take up to five months (four months of zoning clearance and one month for securing the necessary building permit). Such uncertainty associated with zoning authority and with landowner-related delays creates additional challenges to timely deployment

Nevertheless, Triton would expect to phase-in the deployment of a network overlay using the priorities established in the Commission's rule Section 20.18. Specifically, for a pure network-based solution, the Commission requires carriers to deploy Phase II capabilities by October 2001, or to initiate 50 percent coverage within six months of a PSAP's request, whichever is later. Triton is currently evaluating whether the phase-in would best occur on a switch-specific or market specific (BTA-by-BTA) basis. The plan and schedule for implementation would thus depend on when requests are received from the PSAPs and on where

the requesting PSAPs are located. More importantly, the implementation schedule is entirely dependent upon equipment availability from vendors, and, Triton has not concluded a purchase contract with a specific vendor at this time as it has not yet committed to a network-based deployment of Phase II capabilities.

D. PSAP Interface

In addition to the hardware and software changes necessary to accommodate a working network-based overlay on the carrier's side of the ALI transmission, or a handset-based Phase II solution, there may be hardware and software changes necessary to transmit Phase II data to PSAPs. Specifically, Triton anticipates that a new piece of hardware will be necessary to collect network-based data, process it appropriately and deliver it to the relevant PSAP for its use. While that additional device or devices may be located at a centralized point or points within Triton's network, the device will have to be optimized to integrate with PSAP systems and the connectivity Triton has deployed to PSAPs for Phase I information delivery. This process would occur on a market-by-market basis as individual PSAPs request delivery of Phase II ANI data. The schedule for installing the switch software and the hardware and software for interfacing to the PSAPs would be determined by the timing of the requests received from the PSAPs. Should Triton deploy a network-based solution, it expects to be prepared with the necessary equipment by October 1, 2001, or within 6 months of a request from a PSAP, whichever is later. The requesting PSAP will need to ensure that their equipment is capable of integrating to Triton's collection equipment and of receiving and interpreting the ALI data.

E. Existing Handsets

Should Triton deploy a handset-based solution, it will advertise the new E911 handset capability and encourage its subscribers to replace existing handsets.

F. Location of Non-Compatible Handsets

Those non-subscribers to Triton service with network-based systems roaming into a Triton market will receive Phase I capabilities, as will Triton's subscribers that have not yet upgraded their handsets. Alternatively, a pure network-based solution will support ALI capability for all handsets and thus there would be no incompatibility issue for Triton with a network overlay approach.

G. Other Information

Triton is committed fully to meet the Commission's established timetables for the deployment of Phase II ALI capabilities. Triton notes, however, that it does not control the delivery timetables of equipment manufacturers and, despite all its intended testing and optimization of a handset-based solution, as well as a network-based solution, Triton ultimately cannot guarantee that the technology will consistently deliver the degree of accuracy the Commission's rules mandate. While Triton certainly hopes that all handsets or systems perform at a high degree of precision and achieve immediate, successful integration, it is possible that Triton may have to seek rule waivers where integration or accuracy cannot be achieved within the Commission's mandated timeframes.

III. Conclusion

Triton is committed to searching every possible course to find a Phase II solution that complies with the Commission's standards in fastest timeframe possible. Because, however, the

technology is simply not available to deploy either a handset or network Phase II solution, Triton, cannot, at this point choose between the two. Manufacturers may develop or enhance technologies over the next twelve months such that Triton will able to select the most optimal Phase II solution. Pursuant to the instructions in the Public Notice, Triton will submit a new report promptly upon any determination to implement a technology for Phase II E911. If questions should arise in connection with this E911 report, please contact the undersigned.

Respectfully submitted,

TRITON PCS LICENSE COMPANY, L.L.C.

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November 9, 2000

CERTIFICATE OF SERVICE

I, Roberta L. Rosser, a Legal Secretary in the law firm of Dow, Lohnes & Albertson, do hereby certify that on this 9th day of November, 2000, I caused copies of the Report of Triton PCS License Company, L.L.C. to be sent via hand-delivery to the following:

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